

1-4 HW

ALGEBRA In the figure, \overleftrightarrow{YX} and \overleftrightarrow{YZ} are opposite rays. \overleftrightarrow{YU} bisects $\angle ZYW$, and \overleftrightarrow{YT} bisects $\angle XYW$.

34. If $m\angle ZYU = 8p - 10$ and $m\angle UYW = 10p - 20$, find $m\angle ZYU$.

35. If $m\angle 1 = 5x + 10$ and $m\angle 2 = 8x - 23$, find $m\angle 2$.

36. If $m\angle 1 = y$ and $m\angle XYW = 6y - 24$, find y .

34. $8p - 10 = 10p - 20$
 $10 = 2p$
 $5 = p$
 $8(5) - 10 = 30^\circ$

36. $y = \frac{1}{2}(6y - 24)$
 $y = 3y - 12$
 $-2y = -12$
 $y = 6$

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1-4 HW

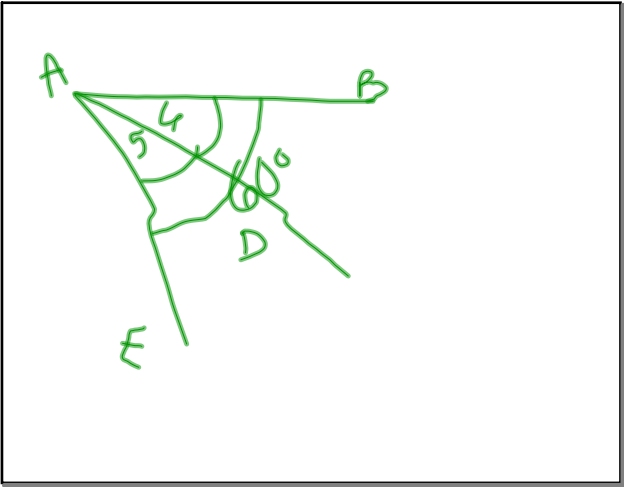
37. If $m\angle WYZ = 82$ and $m\angle ZYU = 4r + 25$, find r .

38. If $m\angle WYX = 2(12b + 7)$ and $m\angle ZYU = 9b - 1$, find $m\angle UYW$.

39. If $\angle ZYW$ is a right angle and $m\angle ZYU = 13a - 7$, find a .

37. $4r + 25 = \frac{1}{2} 82$
 $4r + 25 = 41$
 $4r = 16$
 $r = 4$

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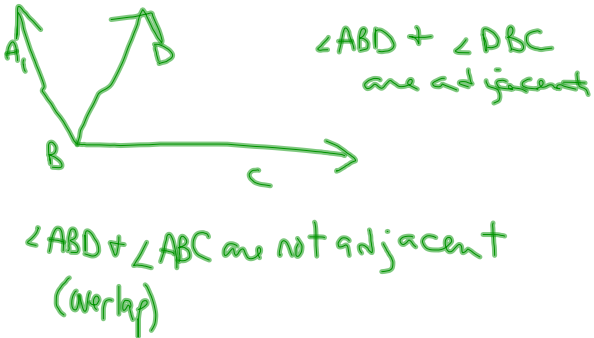


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1-5 Angle Relationships

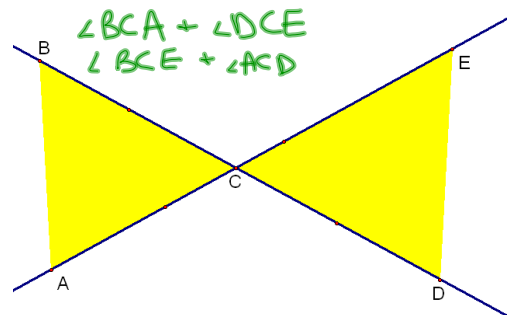
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Adjacent angles—2 \angle s that lie in the same plane, have a common vertex, and a common side, but no common interior points

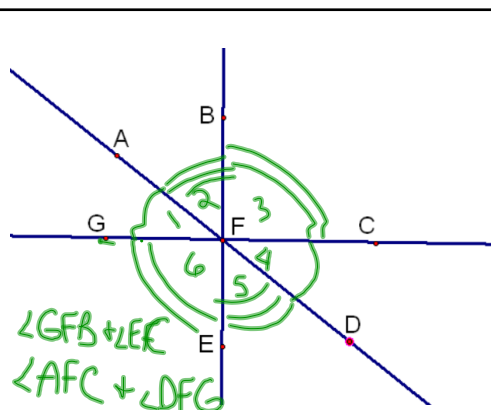


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Vertical angles—2 nonadjacent \angle s formed by intersecting lines

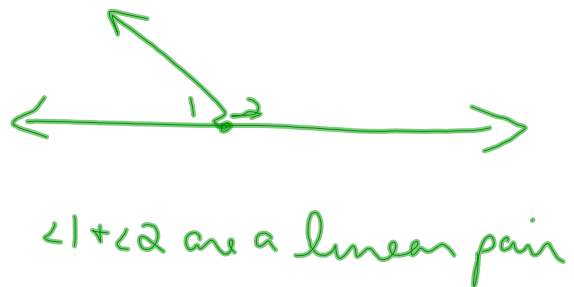


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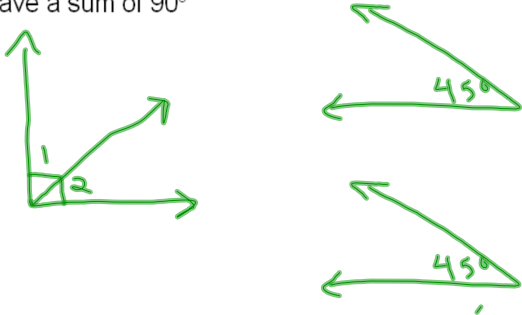
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Linear pair—a pair of adjacent \angle s whose non-common sides are opposite rays



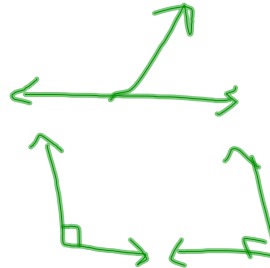
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Complementary angles—2 \angle s whose measures have a sum of 90°



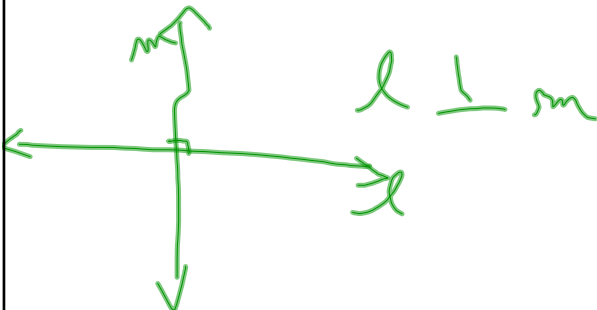
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Supplementary angles—2 \angle s whose measures have a sum of 180°



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Perpendicular lines—lines that form right \angle s; form congruent adjacent \angle s (\perp)



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Example 1

An angle is 6° less than twice its complement. Find the angles.

$$\begin{aligned} x + y &= 90 \\ x &= 2y - 6 \\ 2y - 6 + y &= 90 \\ 3y &= 96 \\ y &= 32 \end{aligned}$$

$$32^\circ, 58^\circ$$

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Example 2

An angle is 44° more than its supplement. Find the angles.

$$\begin{aligned}
 x + y &= 180 \\
 x &= y + 44 \\
 2y + 44 &= 180 \\
 2y &= 136 \\
 y &= 68^\circ \\
 x &= 112^\circ
 \end{aligned}$$

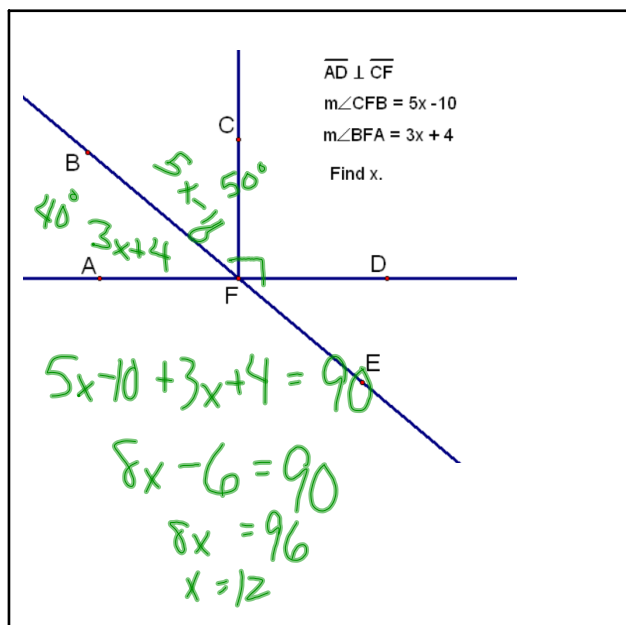
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Example 3 Two angles are complementary.

An angle is 17 times as large as the other. Find the angles.

$$\begin{aligned}
 x + y &= 90 \\
 x &= 17y \\
 17y + y &= 90 \\
 18y &= 90 \\
 y &= 5^\circ \\
 x &= 85^\circ
 \end{aligned}$$

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